Q2

a) We can solve a linear system of equations $Ax = b$ using LU decomposition along with forward substitution (to solve for y) and backward substitution (to solve for x)

Step 1: Using the 'myLU' function to compute the LU factorization of matrix A, we get 2 matrices which are L and U where L: Lower triangular, U: Upper triangular such that $A = LU$

```
[L, U] = myLU(A);
```

Step 2: Next we can utilise the 'fwdSubst' function to solve for y in $Ly = b$. [$LUx = b$. Substitute Ux as 'y' [$Ux = y$]]

Call: `y = fwdSubst(L, b);`

where L: Lower Triangular matrix
b: right-hand side vector

Step 3: Now that we have y, we can solve for x in equation $Ux = y$ using backward substitution
We can use the 'backSubst' function to solve for x by performing backward substitution

`x = backSubst(U, y)`

where U: Upper triangular matrix
y: Solution vector obtained from forward substitution.

Step 4 After performing the above steps (Step 1-3) the variable 'x' will contain the solution to the linear system $Ax = b$.